

# ABSTRACT

The present invention has an object to improve the flow property so as to increase the gas flow amount, to inhibit the gas from staying within a valve chamber, and to enhance the gas-replacement property such as evacuation performance and purge performance.

A housing (2) is provided with a first flow passage (7), a valve chamber (9) of a shut-off valve (8) and a second flow passage (10) in the mentioned order. A diaphragm (13) is arranged so that it hermetically covers the valve chamber (9). The first flow passage (7) has an inner end opened into an inner surface of the valve chamber (9) to which a mid portion of the diaphragm (13) is opposed. A valve seat (15) is formed around this opening. The shut-off valve (8) is opened and closed by allowing the diaphragm (13) to approach and separate from the valve seat (15). A groove portion (18) is formed in the inner surface of the valve chamber (9) around the valve seat (15). A groove outlet/inlet (19) which communicates with the second flow passage (10) is opened into the groove portion (18) in an area larger than a circle having a diameter of a groove width (w). The second flow passage (10) communicates with the valve chamber (9) through the groove outlet/inlet (19) and the groove portion (18) in the mentioned order.